

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
Blue Ridge Regional Office

INTRA-AGENCY MEMORANDUM

Permit Writer	Berkeley			
Memo To	Air Permit File	Date	Draft??	
Facility Name	Sam Moore Furniture LLC			
Registration Number	30072	[REDACTED]		
County-Plant I.D.	019-00006			
UTM Coordinates (Zone 17)	632.3	Easting (km)*	4133.2	Northing (km)*
Elevation (feet)*	860	[REDACTED]		
Distance to Nearest Class I Area (select one)	97.2	SNP (km)	25.1	JRF (km)
FLM Notification (Y/N)	N	Required if less than 10K (minor), 100K (state major)		
NET Classification (A, SM, B)	A	Before permit action	SM	After permit action
Title V Major Pollutants	SO2, VOC, HAP	Before permit action	None**	After permit action
PSD Major Source (Y/N)	Y	Before permit action	SM	After permit action
PSD Major Pollutants	VOC	Before permit action	None	After permit action

* From CEDS

** Source remains Title V by rule

I. Introduction

Sam Moore Furniture LLC (Sam Moore) is wholly owned and operated by Hooker Furniture Corporation. Sam Moore manufactures upholstered chairs; with the wooden frames made from purchased dimensioned wood and plywood¹. The facility is located at 1556 Dawn Drive in Bedford, VA.

Sam Moore is currently permitted under the following permits:

- an NSR permit dated 3/4/98 for woodworking equipment (CEDS 19980304),
- an NSR permit dated 8/30/00 for a wood dust collection system (CEDS 2),
- an NSR permit dated 10/26/01 for furniture finishing operations (CEDS 5),
- an NSR permit dated 10/29/01 for the Northfab Boiler (CEDS 4), and
- a Title V permit with an effective date of 3/7/07(CEDS 7)²

¹ See Statement of Basis for CEDS 7 for a more complete description of the facility operations.

² A Title V permit renewal application was received on 8/26/11 (CEDS 8)

On 10/1/12, BRRO received a permit application from Sam Moore for a State Operating Permit to voluntarily limit the facility's Potential-To-Emit to less than current Title V major source thresholds. It is noted that Sam Moore understands and concurs that due to EPA's once in/ always in policy for facilities subject to a MACT, their facility will remain "Title V by rule"³.

II. Emission Unit(s) / Process Description(s)

As described in the current Title V permit, the equipment at Sam Moore consists of:

- B001: an existing, 9.8 MMBtu/hr, No. 2 oil fired boiler (manufacturer = Iron-Fireman)
- B002: a permitted, 12.6 MMBtu/hr wood (primary) and No. 2 oil fired boiler (manufacturer = Northfab; current NSR permit dated 10/29/01)
- B003: an existing, 8.4 MMBtu/hr, No. 2 oil fired boiler (manufacturer = Cleaver Brooks)
- W004: Miscellaneous permitted woodworking equipment (collectively rated at 800 board feet/hr) and the related wood dust collection and handling system (current NSR permits dated 3/4/98 and 8/30/00, respectively)
- F003: Furniture Finishing Operations, including (8) spray booths and (3) steam heated ovens (current NSR permit dated 10/26/01), and
- G006: Furniture Gluing Operations (collectively rated at 2 gal/hr), including (2) hooded spray stations (permit: none)

As shown in Attachment 1 to this analysis (worksheet "Pre-SOP PTE"), before the current request the only criteria pollutants with PTEs greater than major source levels are SO₂ and VOC at ~ 239 and 296 tons/yr, respectively. Also, as described in the Statement of Basis (SOB) for the current Title V permit, "...the potential individual HAPs exceed...10 tons/yr and combined HAPs exceed...25 tons/yr."⁴

The emission rate limiting mechanisms included in the current SOP that are added to limit the pollutant-by-pollutant PTEs such that the Sam Moore facility becomes synthetic minor for all pollutants for Title V are described below and are quantified in Attachment 1.

SO₂

B001 & B003: Neither the Iron-Fireman nor the Cleaver Brooks boiler have an NSR permit but they are included in the facility's Title V permit with short term PTEs based on the provisions of 9 VAC Chapter 40. Therefore their SO₂ emissions are calculated at 2.64K lbs SO₂ / hr⁵ as presented in the Title V permit condition and at 8760 hrs/yr. Upon inquiry, the facility informed BRRO that there is a single fuel oil tank that services all three boilers at the facility. The third boiler, the Northfab boiler (B002), has wood and No. 2 oil as permit-

³ Sam Moore was subject to the Furniture MACT (Subpart JJ) on that MACT's compliance date.

⁴ Although the SOB is not explicit in its justification for this (HAP) conclusion, since: (a) the limit on VOC are >> the HAP thresholds, (b) the specific coating formulations are not limited in the NSR permit, and (c) the current permit application "...requests synthetic minor permit limitations for ...HAP" it is not unreasonable to conclude that the current HAP PTEs are above the major thresholds.

⁵ See 9VAC5-40-930

approved fuels. Therefore Sam Moore is comfortable accepting the following limits for B001 and B003 in the SOP:

- the explicit approved fuel is distillate oil⁶, which by defining specification has a maximum sulfur content of 0.5% by weight, and
- the requested distillate oil limit of 400,000 gallons/yr, combined for both B001 and B003

It is noted that conditions of the current T5 permit already include the requirements to keep records of the annual throughput of distillate oil for boilers B001 and B003 (Condition IIIC1a) and fuel certification records for each shipment of distillate oil (Condition IIIC1d). These requirements are repeated in the SOP Conditions 11b and 11a respectively since their basis is solely in the Title V permit.

B002: The Northfab boiler NSR permit (CEDS 4) includes emission limits for SO₂. Like B001 and B003, conditions of the current T5 permit already include the requirements to keep records of the annual throughput of distillate oil for this boiler (Condition IVC1a) and fuel certification records for each shipment of distillate oil (Condition IVC1d). Again, these requirements are repeated in the SOP Conditions 11c and 11a respectively since their basis is solely in the Title V permit.

W003, F003 and G003: No additional limits are needed in the SOP for SO₂ from these units.

As shown in Attachment 1 (worksheet “Summary”) the resulting facility PTE_{SO₂} is reduced to 42.6 tons_{SO₂}/yr, which will make Sam Moore a Title V minor source for this pollutant.

VOC

B001 & B003: As mentioned in the SO₂ section above, the SOP includes limits on the type of approved fuel (Condition 2) and on the annual throughput of that fuel for both of these two boilers combined (Condition 3), and will require recordkeeping to demonstrate compliance with these applicable requirements (Conditions 11a and 11b). As shown in Attachment 1 (worksheet “Iron-Fireman”) the resulting PTE_{VOC} for B001 & B003 is < 0.5 ton/yr (i.e., 0.04) and so in accordance with current practice no emission limit is included in the SOP.

B002: Again, the NSR permit approved fuels for the Northfab boiler are wood and distillate oil (Condition 7 in CEDS4) but there is no throughput limit on either fuel. For VOC, wood has the larger emission factor of these two fuels. As shown in Attachment 1 (worksheet “Northfab-WOOD”) the contribution from B002 to the facility wide PTE_{VOC} is calculated as a function of wood firing at 8760 hr/yr and is 0.9 tons/yr. The SOP includes this value for the annual emission limit, and also adds the related short term emission limit (i.e., 0.21 lb/hr) in order to make the annual limit practicably enforceable (Condition 6). Like B001 and B003, a condition of the current T5 permit already includes the requirement to keep records of the annual throughput of wood for B002 (Condition IVC1a). This requirement is repeated in the SOP Condition 11c since its basis is solely in the Title V permit.

⁶ The language of the recordkeeping conditions of the current T5 permit (Conditions IIIC1a&d) implies that the fuel for B001 and B003 is distillate oil. Per current boilerplate language “distillate oil” means oil that meets the...specification for Grades 1 or 2

W004: Typically VOC emissions are not expected from furniture woodworking operations.

F003: VOC emissions from finishing are limited by the 10/26/01 NSR permit to 230 tons/yr but as shown in Attachment 1 (“FinCalc-THB”) the current permit application uses historical coating type and usage data to recalculate a lower, expected maximum actual annual emission value (94.0 tons/yr). The SOP includes this new, lower value for the rolling 12-month annual emission limit (Condition 8) and requires a monthly material balance to demonstrate on-going compliance with that limit Condition 11e.

G006: There is no NSR permit that addresses the gluing operation at Sam Moore. VOC emissions are expected from G006. As shown in Attachment 1 (“FinCalcs-THB”) the current permit application⁷ uses an expected worst case glue type and usage to calculate a maximum actual for annual emission limit (4.8 tons/yr). The SOP includes this value for the rolling 12-month annual emission limit (Condition 7) and requires monthly material balance calculations to demonstrate on-going compliance with these limits for G006 (Condition 11d).

As shown in Attachment 1 (worksheet “Summary”) the resulting facility PTE_{VOC} is reduced to 99.80 tons /yr, which will make Sam Moore a Title V minor source for this pollutant. Since this value is quite close to the Title V major source threshold and VOC emissions are expected from at least two distinctly different type industrial process (i.e., fuel combustion and coating/glue application) the SOP includes this value for the facility wide annual emission limit (Condition 9). Condition 11.f requires records of to demonstrate on-going compliance with the facility-wide VOC limit.

HAP

The current SOP limits the facility-wide HAPs emissions to less than 9.5 tons per year of any single HAP and 24.5 tons per year of all HAP in aggregate (Condition 10) and requires monthly calculations to demonstrate on-going compliance with these limits (Condition 11g).

III. Regulatory Review

A. 9 VAC 5 Chapter 80, Part II, Article 6 – Minor New Source Review

The application was received before 11/7/12, the effective date of the current revision of the Article 6 regulation, but additional information needed to complete the review was received on 1/3/13. The current revision of Article 6 applies “to construction of a new stationary source or to any project”⁸. The current application is not related to a new stationary source, and nothing in the current application request meets Article 6’s definition of a project.⁹ Therefore Sam Moore’s current permit request is not subject to review under Article 6.

⁷ See 1/3/13 revision to application

⁸ Article 6 Applicability, 9 VAC5-80-1100.A: “... the provisions of this article apply to (i) the construction of any new stationary source or any project (which includes an addition or replacement of an emissions unit, any modification to an emissions unit or any combination of these changes)...

⁹ Per 9 VAC 5-80-1110 “‘Project’ means any change at an existing stationary source consisting of the addition, replacement, or modification of one or more emissions units”

B. 9 VAC 5 Chapter 80, Part II, Article 8 - PSD Major New Source Review and Article 9 – Nonattainment Area Major New Source Review

Not applicable. Bedford is a PSD area, as designated in 9 VAC 5-20-205. As stated in the Statement of Basis for the current Title V permit and shown in Attachment 1 (“Pre-SOP PTE) before the SOP is issued, the current PTE_{VOC} at Sam Moore is in excess of the 250 tons/yr PSD major source threshold.^{10&11} However, by the limiting of the PTE_{VOC} in the SOP below major source threshold, Sam Moore is no longer a PSD major source. Article 8 only applies to major stationary sources (i.e., new major sources or projects at major stationary sources).

C. 9 VAC 5 Chapter 50, Part II, Article 5 - NSPS

None applicable.¹²

D. 9 VAC 5 Chapter 60, Part II, Article 1 - NESHAPS

None applicable.

E. 9 VAC 5 Chapter 60, Part II, Article 2 - MACT

Subpart JJ, the Wood Furniture Manufacturing MACT: As stated in the Statement of Basis for the current Title V permit (page 5) MACT JJ applies to the facility, and the provisions of this MACT for finishing operations and for adhesives are included in Section VIII of that permit.

Subpart JJJ JJJ, the Area Source Boiler MACT: In accordance with the version promulgated on 2/1/13, all three boilers at Sam Moore are subject this MACT. B001 and B003 are existing oil-fired boilers and are in the subcategory having heat input capacity greater than 5 MMBtu/hr.¹³ B002 fits the definition of an existing boiler and fits the biomass subcategory.¹⁴

F. State-Only Enforceable Under 9 VAC 5-80-1120 F

Not applicable. No conditions in the current draft are derived uniquely from the Chapter 40 odor or toxic regulations, or from the Chapter 50 odor or toxic regulations.

IV. Best Available Control Technology Review (BACT) (9 VAC 5-50-260)

BACT is not required for this voluntary SOP action.

V. Summary of Actual Emissions Increase

Sam Moore is not requesting an increase in any emission limit currently in effect. This SOP action has no associated emissions increases.

¹⁰ The Pre-SOP PTE of no other pollutants is > PSD major source thresholds.

¹¹ Beginning on July 1, 2011, greenhouse gases (GHG) is a pollutant that must be considered for regulation as a “regulated NSR pollutant” for projects that occur at any stationary source. GHG is subject to regulation under the PSD program if the project occurs at a stationary source with a potential to emit (PTE) 100,000 tons of CO₂ equivalents¹¹ (CO₂e) per year and the project causes an increase in CO₂e of at least 75,000 tons per year. As shown in Attachment 1 (worksheet “Pre-SOP PTE,” note 2) the estimated PTE_{CO₂e} is less than 34,000 tons per year.

¹² From the Statement for Basis of the current Title V permit (page 3) “No NSPS applies to anything at the plant.”

¹³ See MACT JJJJ, Table 2, row 4 which requires initial and biennially tune-ups.

¹⁴ See MACT JJJ JJJ, Table 2, row 6 which requires initial and biennially tune-ups.

VI. Dispersion Modeling

A. Regulated Pollutants

Not required for this voluntary SOP action

B. Toxic Pollutants

Not required for this voluntary SOP action

VII. Boilerplate Deviations

The SOP Generic and SOP Skeleton boilerplates were used to develop the draft permit. There are no deviations included in the current SOP for Sam Moore. Also, the currently approved draft of the required public notice for SOP's was used.

VIII. Compliance Demonstration

See discussion in Section II above.

IX. Title V Review - 9 VAC 5 Chapter 80, Part II, Article 1 start here

As mentioned the Sam Moore facility will remain Title V by rule after the current SOP is in place, and the permit application has been received for the renewal of the current Title V permit. The relevant requirements from this SOP will be included in that renewal.

X. Other Considerations

In accordance with 9 VAC 5-80-1020A, public participation is required to make a SOP federally enforceable. The required 30-day comment period will begin when notification is made to the public of the opportunity review the draft permit package for this SOP. That public notice will be published in the (Lynchburg) News & Advance.

XI. Recommendations

Approval of the draft SOP permit is recommended.

Attachments

Attachment 1: Facility PTEs R6.xlsx workbook (includes 11 worksheets)